POSTGRADUATE DIPLOMA IN FINANCIAL AND COMPUTATIONAL MATHEMATICS

Overview

NFQ Level 9, Major Award

Exit Award only

Candidates on the MSc (Financial and Computational Mathematics) (https://ucc-ie-public.courseleaf.com/programmes/mscfcm/) programme who pass Part I but who fail to meet the requirements to proceed to Part II (see Marks and Standards (https://ucc-ie-public.courseleaf.com/general/marksandstandards/)) or who choose not to progress to Part II will exit the programme with the Postgraduate Diploma in Financial and Computational Mathematics.

Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

Programme Requirements

Code	Title	Credits
Students take **60** credits as follows – all listed core modules (**45** credits) and **15** credits of elective modules:		
Core Modules		
MF6010	Probability Theory in Finance	10
MF6011	Derivatives, Securities, and Option Pricing	5
MF6012	Computational Finance I	5
MF6013	Computational Finance II	5
MF6014	Topics in Financial Mathematics	5
MF6015	Continuous Time Financial Models	5
AM6004	Numerical Methods and Applications	5
CS6322	Optimisation	5
Elective Modules [1]		
Students take modules to the value of **15** credits from the following:		15
AM6007	Scientific Computing with Numerical Examples	
AM6019	Partial Differential Equations	
ST4400	Data Analysis II	
ST6040	Machine Learning and Statistical Analytics I	
ST6041	Machine Learning and Statistical Analytics II	
CS6503	Introduction to Relational Databases	
Total Credits		**60**

[1] Module selection must be approved by the module co-ordinator.

Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

Programme Learning Outcomes

Programme Learning Outcomes for Postgraduate Diploma in Financial and Computational Mathematics (NFQ Level 9, Major Award)
On successful completion of this programme, students should be able to:

- Demonstrate technical competence in the computational aspects of financial mathematics;
- Explain the theoretical basis of mathematical models and techniques used in financial applications;
- Outline how this mathematical framework is influenced by the structure of financial markets
- Identify the limitations of mathematical and statistical models applied to real-world scenariosa;
- Apply appropriate programming languages and software packages to the analysis of problems and mathematical models arising in financial applications.